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ABSTRACT

This study investigated the Spanish language proficiency of Hispanic students in bilingual education programs in north central New Mexico to determine the relative importance of a bilingual pedagogical approach in the development and retention of the minority language. Students from grades 1-8 (n=105) were subjects. Measures included a Spanish availability test, a sociolinguistic questionnaire, and a standardized language dominance and proficiency test. Results indicate that factors such as rurality, linguistic and geographic isolation, socioeconomic status, and active language use are more important for Spanish language maintenance and proficiency than is bilingual education. (MSE)

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The Relative Importance of Bilingual Education in Maintaining the Minority Language

Eliverio Chávez

For this study, I investigated the Spanish language proficiency of Hispanic students participating in bilingual education programs in order to determine the relative importance of a bilingual pedagogical approach in the development and retention of the minority language. Measures of proficiency were: a Spanish availability test, a sociolinguistic questionnaire, and a standardized language dominance proficiency test. The results indicated that factors such as rurality, linguistic and geographic isolation, socio-economic status, and active language use are relatively more important for Spanish language maintenance and proficiency than is bilingual education.

Administrators, teachers, and teacher aides often state that bilingual education programs engender the retention and development of the minority language. This assumption has received some support from studies, such as the one by Cohen (1975), which indicate that bilingual programs contribute to Spanish language maintenance by encouraging the use of Spanish among bilingual education students. Research that has studied the effects of bilingual education on language learning has been inconclusive, however; both positive and negative results have been reported. For example, the results of the St. Lambert project (Lambert & Tucker, 1972), the Ottawa project (Barik & Swain, 1975), and the Culver City project (Cohen, 1974) were essentially positive in that bilingual competence was achieved in both the home and the school language. At the same time, some bilingual

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education programs have produced mixed results; for instance, the Redwood City project (Cohen, 1974) proved ineffectual for Anglo students learning Spanish and only minimally effective for Mexican-American students learning English. Nonetheless, the use of Spanish by Mexican Americans was favorably affected (Cohen, 1975).

Negative results have also been reported, for example, in Mackey's (1972) report on the John F. Kennedy School in Berlin, and the report by Barik and Swain (1974) on the Elgin program in St. Thomas, Ontario. In these programs, bilingual instruction was detrimental to the development of language skills in both languages. The only large-scale national evaluation on the effectiveness of federally funded Title VII Bilingual Education Programs (AIR Report) has shown that these programs are not generally effective in producing competency in the target language; they did achieve favorable results, however, in the development of the minority language (Reed, 1977). In general, the controversy surrounding the contribution of bilingual education to language proficiency has not been satisfactorily resolved.

Other variables, such as attitudes, have also been correlated to language retention and language loss in previous studies. For instance, it has been shown that the displacement of Norman French by English in the Gaspe Peninsula (Quebec, Canada) was partially due to the low status of French (Mougeon, 1976). Also, the demotion of Spanish in Los Angeles was related to an attitude motivation factor that ultimately led to the loss of Spanish proficiency (Phillips, 1975). In this same vein, attitudinal factors dealing with ethnicity and self-identity have also had an effect on language change. Pietropaolo (1974) found that the maintenance of Italian in Toronto correlated positively with conscious effort to maintain cultural identity, and similar results were reported by Lieberson (1970), who related maintenance of French in Canada to the maintenance of ethnicity. It should be noted, however, that some studies (Solé, 1976) have produced results indicating that attitudinal factors are not as important as linguistic ability in the retention of the minority language.

Additional factors that have been correlated to retention of the home language are linguistic and geographic isolation. Sánchez (1976), for example, reported that Chicano bilingualism in the Southwest persists because of linguistic isolation from other language groups, and Miller (1969) reported that French

language maintenance by Franco Americans in northern New England was promoted by the relative isolation of Franco Americans from the rest of the United States. A study by Spolsky (1974) has indicated the interrelationship of isolation and urbanism. In his study on Navajo use he found that children living near an off-reservation town were more likely to speak English than were children living in more isolated areas on the reservation. Thompson (1974), in a study of a Mexican-American neighborhood in Austin, Texas, reported that language shift from Spanish to English was in progress in the urban setting. Essentially all of these studies verified one of the most logical and best documented generalizations in language maintenance and language shift: that urban dwellers are more inclined to shift, and that rural dwellers, because they are more isolated, are less inclined to shift (Fishman, 1971a).

Educational and social advancement have also had an impact on language behavior, especially in cases in which members of a minority language group seek social advancement. Studies like those by van der Plank (1973) have indicated that upward social mobility results in linguistic assimilation of language minorities, and research by Amastae (1978) suggests that upwardly mobile Mexican Americans in south Texas tend to abandon Spanish in favor of English. On the other hand, lack of social advancement tends to result in language maintenance. For instance, Mexican-American children in San Antonio, Texas, living in a low socioeconomic environment are marked by strong linguistic competence in Spanish but insignificant competence in English (Vallejo, 1976). With regard to educational advancement, Teschner (1981) reported that Spanish-language loyalty among students at the University of Texas at El Paso was related to the educational attainment of the students' mothers; that is, lower educational attainment of the mothers correlated with loyalty to Spanish by the sons. This notion was supported by López (1978), who reported that loyalty to Spanish in Los Angeles was related to low educational achievement. Thus the normal relationship between educational and social advancement and language change is that advancement contributes to language shift.

The active use of the minority language is another factor that has been shown to have a strong relationship to the preservation of the home language. In a study reported by Hayden (1966), which involved the use of French in Fall River (Massachusetts), Spanish in San Antonio and New York, and Ukrainian in

Olyphant (Pennsylvania) and Newark (New Jersey), the primary factor that enabled children to master the ethnic mother tongue was active use of the minority language in the home. Other studies that have demonstrated the retentive relationship between home language use and Spanish language maintenance are those by Hudson-Edwards & Bills (1982), who reported on language shift in Albuquerque, New Mexico, and by Thompson (1971), who conducted a study of langauge use in Austin, Texas. In essence, active use of the language is a well-documented factor in the development of minority language proficiency.

PURPOSE

In an effort to determine the relative importance of various factors in the maintenance of the minority language, the present study sought an answer to the following question: What is the relative importance of bilingual education in the development and maintenance of Spanish language proficiency in a population of Hispanic students who are undergoing language shift from Spanish to English? The research question is based on both theoretical and empirical studies, which have suggested that minority language proficiency is based on various sociocultural, psychological, and pedagogical factors. In order to address the question, the present study examined five independent variables: bilingual education, rural and urban residence, educational and occupational achievement, active language use, and language attitudes. The dependent variable, Spanish language proficiency, was determined by a direct measure (a standardized language proficiency test), as well as indirect measures (a self-assessment and an availability test). In light of previous studies, the following null hypotheses are consistent both with the research in the field and with current theory. Hypothesis 1: There will be no correlation between Spanish language proficiency and bilingual education. Hypothesis 2: There will be no correlation between Spanish language proficiency and sociocultural and psychological factors.

METHOD

Setting

Three separate school districts in north-central New Mexico participated in the present study: Chama Valley Independent Schools, a rural district that is characterized by geographic and

Table 1
Ethnic Composition of School Districts

District Type	Total Enrollment	Hispanic	Native American	Black	Other
Urban	6,989	80.7%	7.8%	0.1%	11.1%
Semi-Rural	1,821	33.0%	53.9%	0.0%	12.9%
Rural	998	82.7%	0.5%	0.0%	16.7%

Source: Bureau of Business & Economic Research, *New Mexico Statistical Abstract*, 1979-80 (Albuquerque: The University of New Mexico, 1979), p. 22.

linguistic isolation as well as a rustic life style; Cuba Independent Schools, a semi-rural district that has relatively more contact with the social institutions of mainstream America; and Española Municipal Schools, an urban district consisting of a central city and several surrounding communities. The three districts represent a gradation from rurality to urbanism as well as a concomitant gradation in geographic and linguistic isolation with the most rural district characterized by the greatest degree of isolation. Table 1 shows the ethnic composition of the three school districts that provided subjects for the study.

Subjects

The subjects for this study ranged from six to fourteen years of age and constituted a sample of students from the first grade through the eighth grade. The informants were participating in state and federal bilingual education programs and were initially selected for participation in bilingual programs on the basis of limited English proficiency; therefore, they were ideal subjects for the present study because they represented those individuals who have theoretically maintained the home language. At the same time, they had been exposed to a bilingual pedagogical approach and thus were an index of the effectiveness of bilingual education in the maintenance and development of the minority language. Fifty-five percent of the subjects were male and 45 percent were female. Ninety percent were native-born New Mexicans and had lived an average of eight to thirteen years at their present address, which suggests a relatively stable population.

The majority of the subjects' parents were also native-born New Mexicans; only six of the fathers and ten of the mothers reported being born somewhere other than in New Mexico. Although the occupational distribution of the parents was quite varied, both fathers and mothers tended to cluster within three

occupational groups. Among fathers, 24 percent were service workers or laborers, 27 percent were craftsmen or blue collar workers, and 22 percent were white collar or subprofessional workers. Among mothers, 19 percent were service workers or laborers, 22 percent were white collar or subprofessional, and 52 percent were homemakers. In reference to education, the majority of the parents clustered within the secondary educational range, that is, from seven to twelve years of education. An analysis by site indicated that the adults from the rural district had the highest percentage of service workers and laborers as well as the lowest educational levels. In fact, more than four times as many fathers from the rural district had only an elementary education compared with those from the urban district, and five times fewer had some college education compared with fathers from the urban district. In essence, the subjects from the rural district come from homes marked by a lower socioeconomic status.

Instrumentation

Three measures were used to assess the language skills of the subjects who participated in the study: a standardized language dominance proficiency test, a Spanish availability test, and a self-rating of the four basic Spanish language skills. In addition, the relationship between language proficiency and sociopsychological factors was examined by the use of a sociolinguistic census form. The language dominance proficiency test used to measure the Spanish language skills of the subjects is the Language Assessment Scales (LAS). This test is divided into two instruments: the LAS 1, which is designed for children in grades K-5, and the LAS 2, for grades 6 and up. Each instrument also consists of two independent tests, one in English and the other in Spanish, which are presented primarily on tape.

The sociolinguistic questionnaire was a modification of one used by Fishman (1971b) in his sociolinguistic census of a Puerto Rican neighborhood in Jersey City. The questionnaire is divided into two major components: first, a section dealing with demographic variables, and second, a section composed of language questions related to active language use in the domains of home, school, and religion, as well as self-ratings of language skills, the developmental aspect of language, and language attitudes.

The availability test is based on a model formulated by Mackey (1970) in his research on French-English bilingualism. The test

used in the present study elicited Spanish words associated with various semantic fields such as food, clothing, and the like. The subjects produced words that serve as labels for concept categories, especially concrete nouns.

Selection of Subjects

Directors of bilingual education programs were contacted for the purpose of obtaining LAS scores of students participating in bilingual education programs. Through these efforts, test scores for a total of 462 students were obtained. A sample of the population was derived by arbitrarily selecting every fourth student whose name appeared on the LAS test scores. Subsequent administration of the availability test and the sociolinguistic questionnaire produced a sample size of 105 students. In addition to the availability test and the sociolinguistic questionnaire, a sample of 100 LAS scores was analyzed to compare the scores with the results of the other two measurements. The sample was obtained by selecting the scores of every other male and female to ensure a representative sample of male and female test results.

Administration of Instruments

At each school in which the study was conducted, the research team was provided with private rooms in which to administer the instruments. First, students answered questions contained in the sociolinguistic questionnaire; then the availability test was administered. After the initial instructions, two practice semantic fields and 10 additional fields were used. The time alloted for each semantic field was one minute. The practice semantic fields were colors and numbers, and the 10 additional fields were the body, clothes, the house, nature, food, the school, animals, occupations, the family, and religion. The words supplied by the subjects were recorded by means of a cassette tape recorder and were later transcribed. Overall, the sociolinguistic questionnaire and the availability test required 20 minutes per subject.

RESULTS

The sociolinguistic questionnaire generated various data concerning self-rated language proficiency; language acquisition; language use in the domains of the home, school, and religion; and language attitudes. An analysis of the responses related to self-assessed Spanish language proficiency (Table 2) clearly

Table 2
Self-rated Spanish Language Proficiency

Language Skill	District	N	Yes (%)	A Little (%)	No (%)
Understand Spanish	Rural	27	92.6	7.4	0.0
	Semi-Rural	30	56.6	36.6	6.6
	Urban	48	41.6	47.9	10.4
Speak Spanish	Rural	27	92.6	7.4	0.0
	Semi-Rural	30	40.0	50.0	10.0
	Urban	48	33.3	43.7	22.9
Read Spanish	Rural	27	40.7	44.4	14.8
	Semi-Rural	30	20.0	40.0	40.0
	Urban	47	17.0	31.9	51.0
Write Spanish	Rural	27	44.4	48.1	40.7
	Semi-Rural	30	23.3	33.3	43.3
	Urban	48	10.4	29.1	60.4

revealed a correlation between proficiency and rurality; that is, the more rural the locality, the greater the proficiency in Spanish reported by the informants. For example, in relation to understanding Spanish, 93 percent of the subjects from the rural district answered "yes," which is 36 percent more than the semi-rural district and 51 percent more than the urban district. With regard to speaking Spanish, the 93 percent reported by informants from the rural district is 53 percent more than the semi-rural district and 59 percent more than the urban district. These results indicate that the subjects from the rural district are more proficient in aural-oral skills than are the subjects from the other two districts.

With respect to the active use of the minority language, the subjects from the rural district demonstrated a higher overall usage. In the home domain, the data from the rural district indicated that 78 percent of the subjects use Spanish in spoken communication, while inversely, the results from both the urban and semi-rural districts indicated that 67 percent use only English at home.

In the school domain, 11 percent of the subjects from the rural district use Spanish exclusively, and 41 percent use both Spanish and English with other students. On the other hand, 90 percent of the subjects from both the semi-rural and urban districts use only English with other students. In the language used with the teacher, 82 percent of the subjects from the rural district, 67 percent from the semi-rural district, and 92 percent from the urban district use English exclusively when talking to the teacher.

In the domain of religion, the subjects from all three sites have had some exposure to Spanish in church. In the rural district the priest or minister used Spanish 12 percent of the time, in the urban district 13 percent of the time, and in the semi-rural district, 8 percent of the time. Despite the exposure to Spanish in church, the dominant language for personal prayer was English for all three sites. The subjects in the semi-rural district reported that when praying by themselves they use Spanish 3 percent of the time compared to 10 percent in the urban district and 15 percent in the rural district. Essentially, the subjects from the rural district use Spanish to a greater extent in all three settings; however, the results suggest that English is the dominant language in the domains of religion and school.

In reference to attitude toward the minority language, the results were mixed. When asked what language the subjects liked more, 63 percent from the rural district preferred Spanish followed by the urban district with 42 percent and the semi-rural district with 37 percent. However, when the informants were asked which language is the most important, only 31 percent of the subjects from the rural district named Spanish compared to 60 percent from the semi-rural district and 47 percent from the urban district. Despite the mixed results, there was a positive orientation toward the minority language by the subjects from all three districts.

The results of the availability test (Table 3) indicated a strong correlation between rurality and Spanish language proficiency. This correlation is evident in the fact that the average production of Spanish lexical items per subject increases as one goes from an urban area to a rural area. However, the difference between the urban and semi-rural districts is not substantial because the informants from the semi-rural district produced only 13 words more per subject, or an average of 1.3 words per semantic field. On the other hand, the subjects from the rural district produced twice as many words as those from the semi-rural district and three times as many words as the informants from the urban district. The superior lexical generation by the rural district was also evident in the absolute frequency of lexical items in all semantic fields tested. For example, in the semantic field of religion, the subjects from the rural district produced three times as many words as both the urban and semi-rural districts in spite of the fact that both the semi-rural and urban districts have more subjects than the rural district. In essence, the results indicate that

Table 3

Production of Lexical Items, by Site, in Absolute Frequencies with the Mean

Semantic Fields (In Spanish)	Rural District (N = 27)	Semi-Rural District (N = 30)	Urban District (N = 48)
Body	355	241	282
Clothes	251	138	156
House	343	165	154
Nature	276	92	108
Food	319	177	263
School	215	117	130
Animals	335	180	213
Occupations	146	51	46
Family	286	142	140
Religion	233	67	78
Total	2759	1370	1570
Mean Production	102.2	45.7	32.7

the subjects from the rural district have a more extensive Spanish lexicon.

The results from the Spanish LAS (Table 4) correspond with the data from the availability test and the self-rating, namely, that the subjects from the rural district are more proficient in Spanish than the subjects from the urban district. This corroboration is meaningful in light of the fact that the LAS is a more thorough, convergent assessment measure. Rather than depending on a single aspect of oral language as the availability test does, the LAS provides an overall picture of aural-oral linguistic proficiency based on a student's performance across four linguistic subsystems. The total score in Table 4 is based on conversion scores provided by the authors of the test.

In addition to scores for individual subsystems as well as a total score, the LAS also provides language proficiency levels that are derived from normative interpretation scores and that classify students as either fluent speakers, limited speakers, or nonspeak-

Table 4

Results from the Spanish LAS: Total Score

District	N	Median	Mean	Range	Total Points Possible
Rural	50	69	63.34	24-87	100
Urban	50	44	49.12	29-96	100

Table 5
Spanish Language Proficiency Levels

District	N	Nonspeaker	Limited Speaker	Fluent Speaker
Rural	50	50.0%	24.0%	26.0%
Urban	50	80.0%	12.0%	8.0%

ers of Spanish. The data (Table 5) show that the rural district has three times as many fluent speakers as the urban district; however, the data also reveal that 50 percent of the subjects from the rural district and 80 percent of the subjects from the urban district are categorized as nonspeakers of Spanish. These findings suggest that the subjects are shifting from Spanish to English in spite of the intervention of maintenance bilingual programs.

In essence, all three measures of Spanish language proficiency indicated that the subjects from the rural district are more proficient in the minority language than informants from the other two districts. A more extensive presentation of the data and a more detailed analysis of the results can be found in an earlier work (Chávez, 1984). Basically, the results support studies such as that conducted by Fishman (1971a), which indicate that rurality and the concomitant linguistic and geographic isolation favor maintenance of the minority language.

DISCUSSION

The present study assessed the Spanish language proficiency of Hispanic students participating in bilingual education programs in order to investigate the relative importance of bilingual education in the development and maintenance of the minority language in relation to various sociocultural, psychological, and economic factors. The underlying, tentative assumption was that if bilingual education prompted the use and development of the minority language, then there would be a leveling effect on the Spanish language proficiency of Hispanic bilingual students. In other words, an educational method that uses the students' home language as a medium of instruction theoretically provides optimal conditions for the maintenance and development of the minority language. Therefore, participation in a bilingual education program should tend to equalize the Spanish linguistic abilities of native Spanish speakers. The leveling effect of education would, in turn, counteract the influence exerted by the other factors. The criteria used to examine this postulate were

presented in the form of two null hypotheses. Each hypothesis is scrutinized in this section in order to determine the validity of the original assumption.

The first hypothesis, that there will be no correlation between Spanish language proficiency and bilingual education, is accepted. All three measures of language proficiency suggest that factors other than bilingual education are responsible for Spanish language maintenance and proficiency. This conclusion is supported by the lack of Spanish language skills demonstrated by the subjects in the urban district. This district has had a federally funded bilingual program for 13 years, yet the subjects in this district produced an average of only 3.3 words per semantic field. In addition, the results of the Spanish Language Assessment Scales (LAS) indicated that only four students from the urban district are fluent speakers of Spanish.

A factor that may have contributed to the lack of success in the maintenance of the minority language by the bilingual programs that participated in the study is the fact that Spanish is not used for communication in the school domain. For instance, in the urban district, 92 percent of the bilingual participants used English exclusively when talking to the teacher, and even the subjects from the rural district used English 82 percent of the time. The low use of Spanish in the schools is somewhat of an anomaly in light of the fact that the students are participating in bilingual education programs in which maintenance of the minority language and culture was an acknowledged purpose of each program. Logically, one would expect a much higher use of Spanish in programs where the minority language is theoretically used as a medium of instruction, and even more so in programs where students are characterized by limited English proficiency and come from homes in which the use of Spanish is a dominant factor for participation in the program. It may be that the lack of Spanish usage in the schools has presented a psychological deterrent for the student that has ultimately contributed to language shift. The student may perceive the school as a domain in which English is the more appropriate language for communication, and by extension, the more important language.

The second hypothesis, that there will be no correlation between Spanish language proficiency and sociocultural and psychological factors, is rejected. The data produced by the sociolinguistic questionnaire indicated various factors related to minority language proficiency: rurality, linguistic and geographic

isolation, language use at home, occupational status and educational achievement of the parents of the subjects, and language attitudes. With respect to rurality, all three measurements indicated that subjects from the rural district are more proficient in Spanish than their counterparts from the other two districts. However, it is the interrelationship of many factors that has contributed to the superior results demonstrated by the rural district. First of all, it is the most geographically and linguistically isolated district; consequently, the subjects from this area have the least linguistic influence from English and the greatest opportunity to use Spanish in the community. The subjects in the rural district also differ from the other two districts in language development and language use. For example, a greater number of subjects from the rural district indicated that Spanish is the first language they understood and the first language they spoke. As for language use, a greater proportion of subjects from the rural district use Spanish in aural-oral communication both in the home and with their peers in the school. In terms of occupational status and educational achievement, the rural district has the highest percentage of adults who are service workers and laborers; also, they have lower educational levels than the residents of the other two districts. In fact, the educational variable produced a negative relationship with the lexical generation by the subjects. The data indicated that the lower the educational level of the fathers, the higher the lexical production of the informants. The educational factor was also negatively related to language liked most and language used with other students. Like lexical production, the lower the educational level of the parents, the higher the percentage of subjects who liked Spanish more and the higher the percentage who used Spanish with other students. Finally, in terms of language attitude, a larger percentage of the subjects from the rural district indicated that Spanish is the language they liked most. In essence, the rural district is characterized by many factors that tend to favor language maintenance.

CONCLUSION

Past research dealing with language maintenance and language shift has revealed numerous factors that are correlated with the retention and the relinquishment of the native language. The present study has verified many of the findings produced by past research, and at the same time, it has offered new information

concerning the relative importance of bilingual education in the maintenance and development of the home language among Hispanic students who come from homes in which Spanish is spoken as a native language.

A significant factor in language preservation in the present study is rurality, which has been shown in several studies to be highly correlated with language maintenance. However, the results of the present study indicate that linguistic and geographic isolation are even more important than rurality per se. For instance, the semi-rural district is also located in a rural setting and is very similar to the rural district in population size; however, the districts differ in linguistic and geographic isolation. The rural district has a high concentration of Hispanics both in the school and in the community; thus the informants from the rural district have ample opportunity to speak Spanish. On the other hand, the subjects from the semi-rural district are not isolated from the other language groups. The large number of Navajos in the semi-rural district creates a speech community in which English has become the lingua franca and is used to a greater extent. In essence, there are two interrelated factors that favor language maintenance in the rural district: the higher relative concentration of Hispanics, and the isolation from populations that speak other languages.

However, just as rurality by itself is not enough to ensure the use of the minority language, a high concentration of Hispanics in and of itself is not enough to ensure Spanish language maintenance. This is evident in the results produced by the subjects from the urban district. This district has a very high percentage of Hispanics with 80 percent of the community and 81 percent of the student body being of Spanish origin, yet this district has the lowest Spanish language proficiency. These results indicate the importance of the interrelationship of rurality, a high concentration of Hispanics, and isolation from other language groups. Past studies have suggested that population concentration is more important for language maintenance in urban than in rural settings (Fishman, 1972). However, the present study indicates that population concentration is equally important in rural settings.

With respect to bilingual education, the results suggest that a bilingual pedagogical approach is not a strong determinant of proficiency in Spanish. These results have a direct bearing on minority groups and bilingual educators who may be involved in

efforts to maintain the home language and culture. The implication is that minority language maintenance would best be achieved by a home-based program that concentrated its efforts on active language use in the home domain. Nonetheless, one cannot definitively determine the effect of bilingual education without further research. There is a need to examine the development of Spanish language proficiency among native, Spanish-speaking Hispanic students who are not in bilingual programs, and to compare their performance with that of Hispanic students who are receiving their education using a bilingual approach. All one can say is that the results and conclusions produced by the present study are consistent with a substantial number of research findings to date. However, the study of bilingual education is characterized by polemics, and the present state of the art does not allow apodictic statements. Perhaps additional research in this field will ultimately permit statements of certainty.

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